CHARGE CONTROLLER (MADE IN EUROPE)

TESUP Wind Turbine Charge Controller

"POWER IS IN CREATING."

Revision Index 00

Revision Date:

ENGLISH | EN

USER MANUAL

Made in Europe

A GLIMPSE OF CHARGE CONTROLLER

1. INDEX

2. GENERAL

2.1 GENERAL INSTRUCTIONS:

Before you begin installing, read this entire owner's manual. Identify and note your model wind turbine where it appears in this manual. Following the instruction and recommendations in this manual will help assure safe and enjoyable use of your new renewable energy system.

- Please take the time to read through this manual prior to assembly.
  - Place this instruction manual in a safe place for reference.
  - Wait until a calm day to install or perform maintenance on your Turbine with activation of brake.
  - Listen to your Turbine, if you hear any mechanical noise, maintenance may be required, please contact your Turbine dealer.
  - After installation re-adjust and tighten the screws and bolts.
  - Adhere to proper grounding techniques as established by the National Electrical Code.
  - Your Wind Turbine must be installed in accordance with this manual and local and national building code. Incorrect installation may void your warranty.
  - Wind Turbine blades spin at a potentially dangerous speed, this must be respected. Never approach a Turbine in motion.
  - Note wire size prior to wiring. Any under sizing of wire can be potentially dangerous.
  - Check the manual brake periodically.
  - Check the battery health periodically. The low battery voltage and improper connection can cause over-spin issues.

2.1.1 Operating and Installing Conditions:

- Please make sure that:
  - The wind turbine system has been erected correctly by a suitably trained person.
  - All operating personnel have read and fully understood this translation of the original instructions
  - The wind turbine system is properly maintained and repaired.

2.2 SYMBOLS USED:

- In this Manual


IMPORTANT: Please take a note.


DANGER: Immediate danger can cause serious injury.


WARNING: Potential Danger can cause Serious injury.

CAUTION: Potential Danger can cause moderate injury.


NOTE: Useful Tips

- OTHER SIGNS USED:


GENERAL WARNING.


HIGH VOLTAGE


MAY START WITHOUT WARNING.


ENVIORNMENTAL HAZARD

SAFETY SYMBOLS

2.3 WARRANTY DETAILS:

- The "General Terms of Sale and Delivery" of the manufacturer or his authorised representative apply.

2.4 PRODUCT FEEDBACK:

- Please notify the manufacturer or his authorised representative about any of the following:
  - Accidents
  - Potential safety hazards associated with the wind turbine system
  - Ambiguities in this translation of the original instructions
  - Description of the wind turbine system

3. TECHNICAL DESCRIPTION

3.1 INTENDED USE:

- The wind turbine system may only be used as a "small wind turbine system" (SWTS) to generate power in accordance with EN 61400-2.
- The wind turbine system may only be operated in accordance with the ratings and in the approved wind class (refer to the technical data).
- Observance of the original instructions and compliance with the maintenance and repair instructions are essential preconditions of use for the intended purpose.

3.2 REASONABLY FORESEEABLE MISUSE:

- All forms of use which deviate from or exceed the limits of use described above are contrary to the intended purpose. The manufacturer is not liable for any damage resulting from such use.
- No liability will be accepted by the manufacturer if the equipment has been altered as well as in the event of improper assembly, installation, start-up, operation, maintenance, or repair.
- Only original parts supplied by the manufacturer are approved as spare parts or accessories. Any spare parts or accessories not supplied by the manufacturer have not been tested for operation and could be detrimental to reliability. No liability will be accepted by the manufacturer for any damages which result from the use of non-approved spare parts or accessories.
- Reasonably foreseeable misuse includes:
    - Operation outside the manufacturer's specification.
    - All modifications or changes to the wind turbine system without the manufacturer's written approval!
    - Use of parts other than ZEUS 3.0 original parts.
    - Operation in non-approved SWTS classes.
    - Operation in strong winds or hurricanes.

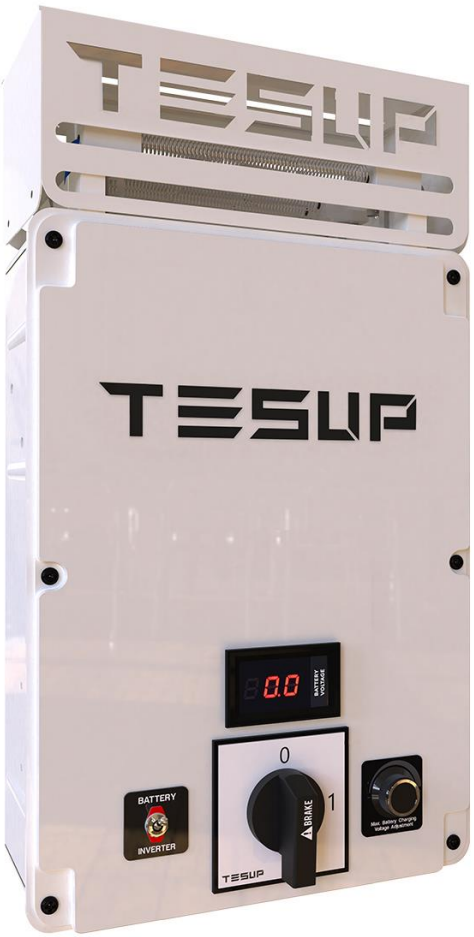
3.3 TECHNICAL DETAILS:

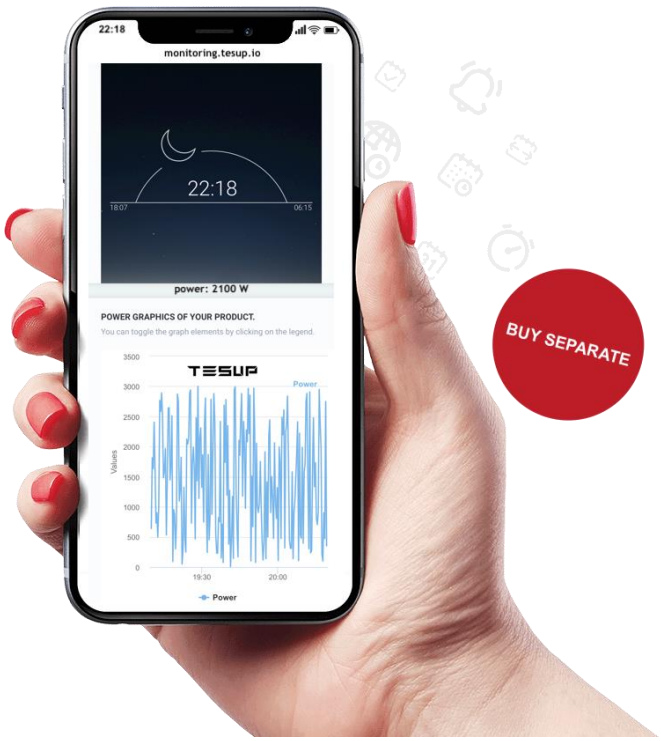
The Wind Turbine Charge Controller from TESUP is an intelligent controller which controls the wind turbine. It safely and efficiently charges and control your battery with the wind generator combination.

With its discreet appearance simple, simple operation with integrated protection functions, this device has high efficiency and low no-load losses. This version of the controller will significantly increase the life and stability of the whole system, especially the batteries.

The special features and product information are listed below:

- Use of solid-state components.
- Manual brake function.
- Increasing the life of the controller. Microprocessor controlled charge with integrated voltage and current limiting.
- Dump-load is included. Modern load dissipation system in three steps to avoid immediate blockage of the turbine. Increasing the lifetime of the stator.
- Resistor (dump load) might be used for heating.





4. PARAMETER & DIMENSIONAL DETAILS

4.1 PARAMETER DETAILS:

Charge Controller with built-in resistors (dump load), potentiometer to adjust the max. battery charging voltage, optional battery or inverter button and a manual brake.

Recommended max. battery charging voltage levels are.

SPECIFICATIONS		
12 V	24 V	48 V
13.8-14.2 Volts	27.6-28.4 Volts	55.2-58.0 Volts

PARAMETER

Carton Box Dimensions & Weight

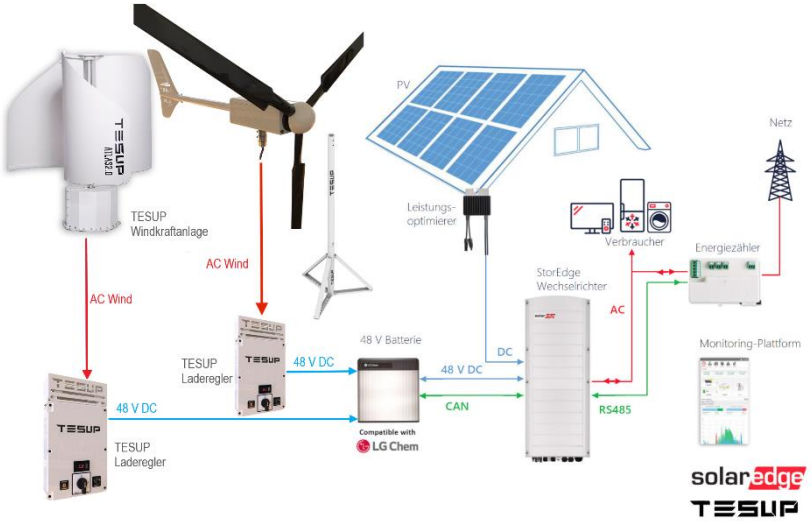
- 35x25x20 cm
- Weight: 2 kg
- MOC of charge controller casing: Aluminium

4.2 GENERAL ARRANGEMENT DRAWING:

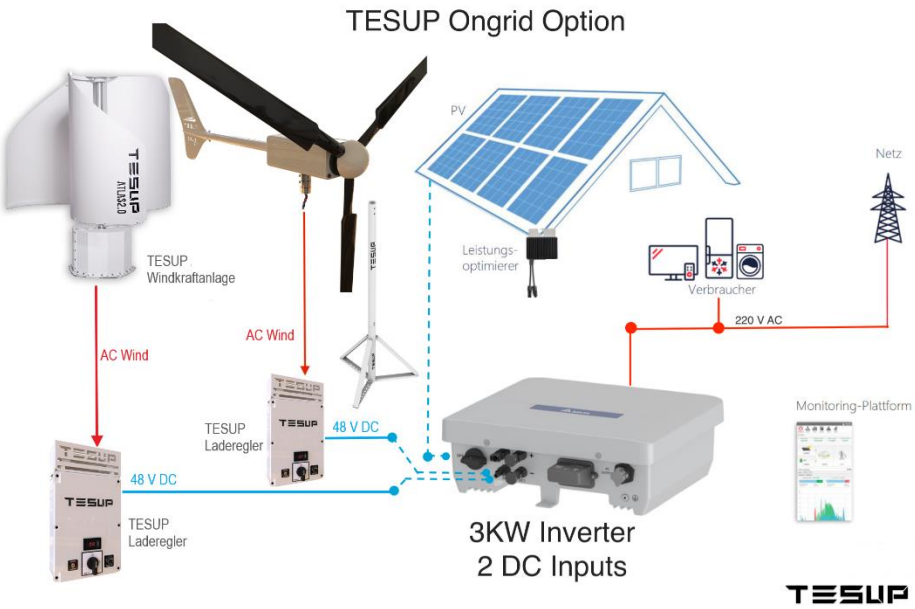
4.3 CONNECTION DETAILS:

The Tesup Charge controller can be connected in two ways:

1. With the Battery Storage.

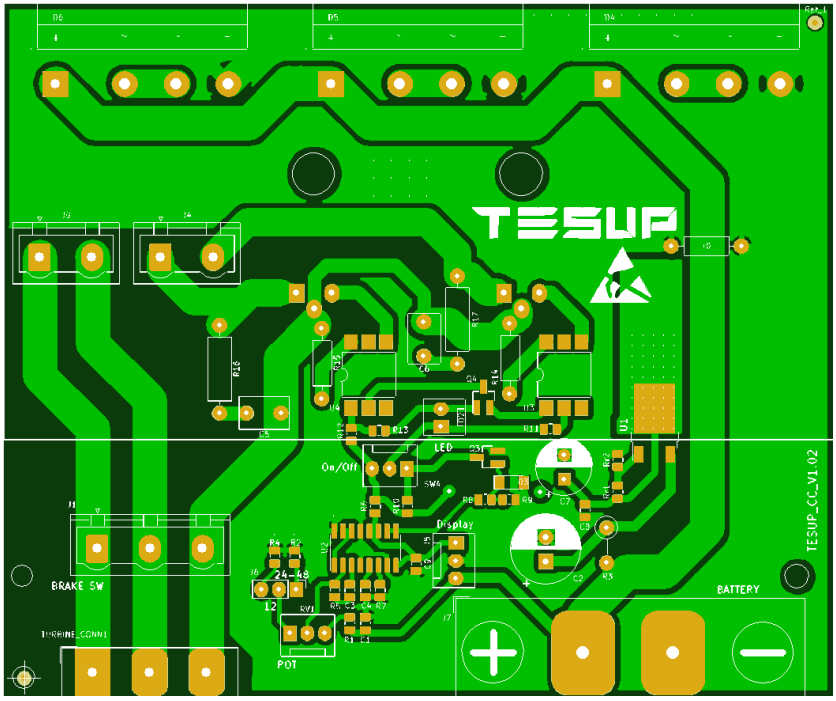


2. With the On-Grid (grid connected).



Moreover the cables of the wind turbine can be connected to the charge controller in a following manner:

- Strip the wire coming through the motor and the connecting wires.
- Secure the wires with the wire nut and add wrap electrical tape around each wire.
- Insert the wire into the controller and then tighten the screw. Do the same for the remaining.
- Connect directly to batteries or to inverter to connect AC power.
- Insert wire into the right-side connectors paying attention to the positive and negative indicators.
- Connect the other end to the battery or inverter and setup the wire using the appropriate size of cable gland or sleeve.
- Finally connect the AC power cable.



Scan the code to see how the cables are connected to the charge controller.

5. REGULAR OPERATION

NOTE: Wind turbine is turned on once the brake is switched off

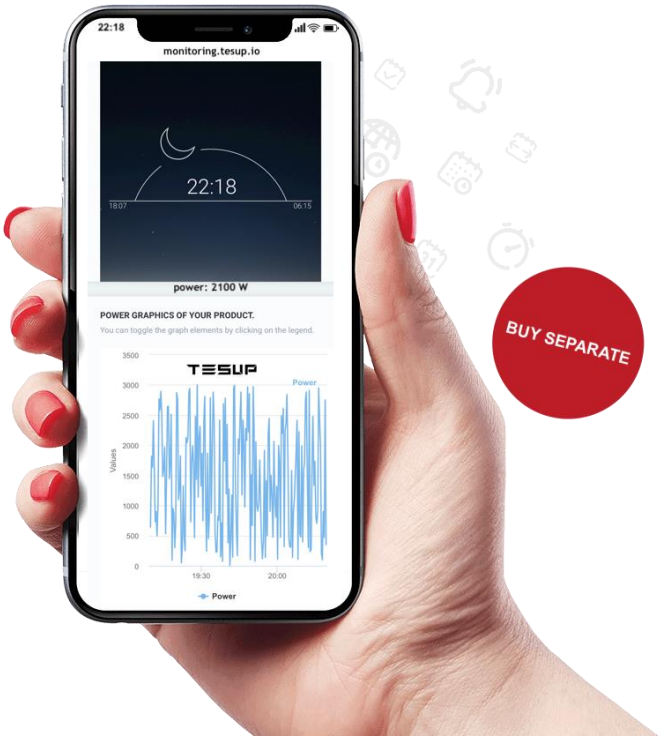
5.1 SWITCHING ON THE WIND TURBINE SYSTEM:

- Unlock the emergency stop button or release the brake button on the TESUP charge controller.
- The brake is released.
- The fast-blinking red LED on the TESUP charge controller goes out.
- The wind turbine system supplies power.

5.2 RESTART AFTER EMERGENCY:

- Make sure the risk has been removed.
- Switch on the wind turbine system (section 8.1)

Now use the TESUP monitoring app to monitor the regular operation of the TESUP devices.



6. SHUTTING DOWN THE WIND TURBINE

6.1 EMERGENCY SHUTDOWN:

- Switch on the brake.
- The wind turbine is short-circuited via the TESUP charge controller.

6.2 TEMPORARY SHUTDOWN:

- Switch on the brake.
- The wind turbine is short-circuited via the TESUP charge controller.
- This type of shutdown can occur during the stormy weather when the wind speed is higher than 27 m/s.

6.3 PROLONGED SHUTDOWN:

- Switch on the brake.
- The wind turbine is short-circuited via the TESUP charge controller.

7. REMOVAL FROM SERVICE AND DISPOSAL

7.1 FINAL DECOMMISSIONING OF WIND TURBINE SYSTEM:

WARNING: Risk of injury due to unqualified dismantling, e.g.

- Persons without suitable training
- Stored energy
- Breakage during dismantling Important note on dismantling and disposal.
- The system must be dismantled in the proper way by a suitably qualified person.

- Shut down the wind turbine system (section 8).
- Have the electrical systems and equipment removed from service by a qualified electrician.
- Make sure all rotors are braked.
- Carefully tilt the tower.
- On the ground: Detach the rotor blades from the generator.
- Detach the generator from the tower and disconnect the electrical wiring

7.2 DISPOSAL OF THE WIND TURBINE SYSTEM AND COMPONENTS:

- Where necessary, dispose of the individual components in consultation with the

NOTE: Make a note of the relevant parameters at the site and have them handy when you contact the manufacturer / specialist dealer.

responsible local authorities.

Wind turbine system	
Wiring, electrical components	Dispose of as electronic scrap
Mechanical components	Segregate prior to disposal

DISPOSAL DETAIL TABLE

8. DECLARATION

CERTIFICATE OF INCORPORATION
OF A
PRIVATE LIMITED COMPANY

Company Number **10155230**

The Registrar of Companies for England and Wales, hereby certifies that

TESUP ELECTRONICS LIMITED

is this day incorporated under the Companies Act 2006 as a private company, that the company is limited by shares, and the situation of its registered office is in England and Wales.

Given at Companies House, Cardiff, on **29th April 2016**.

The above information was communicated by electronic means and authenticated by the Registrar of Companies under section 1115 of the Companies Act 2006

Companies House

REGISTRAR OF COMPANIES FOR ENGLAND AND WALES

THE OFFICIAL SEAL OF THE REGISTRAR OF COMPANIES

9. APPENDIX

10. MANUFACTURER DETAILS & CUSTOMER SUPPORT

TESUP

TESUP HEADQUATERS, 22 SUTTON LANE
NORTH CHISWICK, LONDON W4 4LD
UNITED KINGDOM

TESUP OFFICIAL WEB-STORE ONLINE CHAT

11. NOTES